Issue 5
September 2013

SHARP: Bringing HAIs into Focus

Surveillance for Healthcare-Associated and Resistant Pathogens Unit, Michigan Department of Community Health

www.michigan.gov/hai

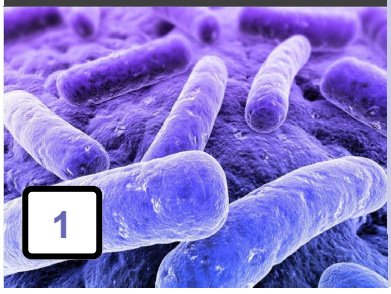
In this issue

Antibiotic Resistance Threats in the U.S.

On Monday, September 16th, the CDC released a report presenting a snapshot of the burden and threats posed by antibiotic-resistant infections with the most impact on human health. Threats were ranked into categories of urgent, serious, and concerning. According to the report, more than two million people in the U.S. get infections that are resistant to antibiotics, and at least 23,000 people die as a result each year.

The main message of the report is that drug-resistant infections are a threat to human health and economic health. The use of antibiotics is the single most important factor leading to antibiotic resistance around the world. Urgent action is needed now by everyone who uses antibiotics. The report indicates that antibiotics are among the most commonly prescribed drugs, but up to 50% of all the antibiotics prescribed for people are not needed or are not prescribed appropriately.

For more information, you can view the full report at *www.cdc.gov/drugresistance/threat-report-2013.*



Annual Cost of HAIs in the U.S. = $10 billion!

On September 2nd 2013, JAMA Internal Medicine online published an article entitled *Health Care–Associated Infections-A Meta-analysis of Costs and Financial Impact on the U.S. Health Care System* by Zimlichman et al. This article brings a new perspective on the costs of HAI in the U.S. The authors performed a review of literature from 1986-2013 to determine cost estimates, used NHSN data for incidence estimates and then used Monte Carlo simulation to generate point estimates and 95% confidence intervals.

They focused the analysis on the 5 major HAI infections (surgical site infection (SSI), central line-associated blood stream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), ventilator-associated pneumonia (VAP) and Clostridium difficile), their cost per infection, length of stay (LOS), and total annual cost. The most expensive cost per infection were CLABSIs ($45,814), while the largest total annual number of cases and cost were SSIs, with 3.3 billion dollars from 158,369 cases. The table below provides the breakdown of the 5 HAIs.

This article brings HAI and their associated costs into the spotlight; however, there are some limitations. Meta-analyses have inherent problems of study section bias and heterogeneity of data. Even with these limitations, this article provides the HAI community with updated information about HAIs. While we have focused our efforts on decreasing HAIs and improving quality we can still strive to do better to avoid these costly infections.

-Noreen Mollon, MollonN@michigan.gov

Meta-analysis results of top 5 HAIs

Infection	Cost/Infection	Attributed LOS (Days)	Total annual cost ($, billions)	Total annual cases
CLABSI	$45,814	10.4	1.85	40,411
SSI	$20,785	11.2	3.30	158.369
VAP	$40,144	13.1	3.09	31,130
C. Diff	$11,285	3.3	1.51	133,657
CAUTI	$896	--	0.28	77,079

2014 CMS Requirements

CMS has provided several updates to reporting requirements for FY 2014.

There has been a change in length of time employees, licensed independent practitioners, students or trainees, and volunteers (18 years of age and older) must be working in the hospital before he/she should be included in the Healthcare Personnel Influenza Vaccination Summary. During FY 2013, the requirement was that employees who had been working in the facility for '30 days' must be included in the hospital's summary data. **The '30 day' requirement has been changed to '<u>one</u> day'** meaning that listed employees should be counted if they have worked in your facility for one day, or even part of one day. Flu vaccination status reporting on other types of contractors such as housekeepers, environmental services staff, construction workers, etc. (Group 4 on the summary form) is **<u>optional</u>** at this time.

CMS has deferred reporting of Medicare beneficiary numbers within NHSN until the 3rd quarter of calendar year 2014. For acute care hospitals, the CMS proposal to expand CLABSI and CAUTI reporting to non-ICU locations, including all medical, surgical and med/surg wards, has been **deferred until January 1, 2015.**

-Judy Weber,
WeberJ4@michigan.gov

CDC Releases NHSN Version 7.2

Over the weekend of August 24 and 25th, CDC released their latest version of the National Healthcare Safety Network (NHSN) program. Changes in the program include:

<u>Changes impacting all NHSN Components:</u>

- Landing page update which allows facilities and groups to now choose the Component that they wish to log into as their first selection.

<u>Changes to the Patient Safety Component:</u>

- Modifications to dataset generation in NHSN analysis: A default option will include the three most recent full calendar years of data, along with the current year's data. There will also be an option to include all data reported by your facility to NHSN, regardless of time period.
- Addition of prevalence rate to CDI LabID event rate table.
- Updated algorithm for assigning CDI assay variable.
- Patient ID added to all SSI SIR analysis datasets.
- Various denominator options when using the Statistics Calculator in NHSN to compare two rates.

<u>Changes to the Healthcare Personnel Safety Component:</u>

- Update to the Healthcare Personnel (HCP) Influenza Vaccination Summary form: include HCP who are physically present in the healthcare facility for at least **1 working day** (previously was 30 working days).

<u>Changes to the Biovigilance Component:</u>

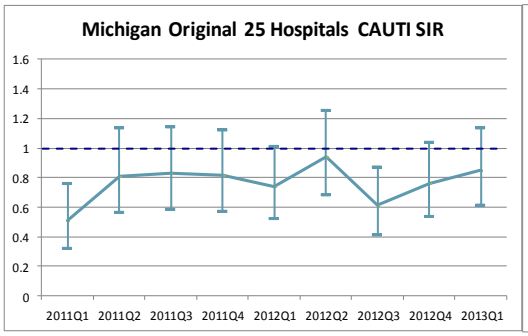
- Several alerts have been deactivated because they no longer coincide with reporting requirements.
- Updates to the Adverse Reaction case definition business rules.

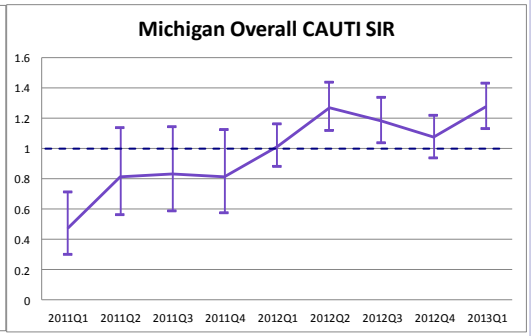
<u>Changes impacting Facilities reporting via Clinical Document Architecture (CDA):</u>

- Update to Antimicrobial Use reporting.
- New versions of CLABSI, CLIP, and Dialysis Event can be imported.

Additional information regarding these changes can be found at the NHSN website:
http://www.cdc.gov/nhsn/commUp.html *-Judy Weber, WeberJ4@michigan.gov*

NHSN Surveillance Update-CAUTI SIRs in Michigan





In the February 2013 Newsletter, we provided the Michigan CAUTI Standardized Infection Ratio (SIR) trends as well as SIR trends for only the 25 hospitals that were reporting CAUTI data to the SHARP Unit prior to the 2012 CMS mandate. The original analysis demonstrated that the CAUTI SIR in Michigan spiked in early 2012 with the addition of over 45 new hospitals, while the SIR for the original reporting hospitals remained stable.

The graphs above provide an update for CAUTI SIR trends in Michigan. The analysis was performed to include data through the end of the first quarter in 2013. -continued on page 3

MRSA/CDI Initiative Update

Conference call/webinar

The MRSA/CDI Champion conference call was held on August 14, 2013 at 10:00 am. Featured presenters at this webinar were Jeff Gabier from Mary Free Bed Rehabilitation Hospital and Jill Girardot from St. Johns Macomb Hospital. Jeff provided an overview of the extensive infection and prevention action plan strategies for their facility, which included patient and family education. Jill gave an overview of the action plan intervention to include and involve environmental services in their education efforts to acheive greater awareness of best practices to reduce MRSA and CDI rates.

The next webinar is scheduled for November 14, 2013 at 10:00am. Featured presenters will be Kristy Lounsbury from Bronson Nursing and Rehabilitation, and Amanda Miller from Hoyt Nursing and Rehabilitation. They will be co-presenting on the advantages of participating in the MRSA/CDI Prevention Initiative when being surveyed. This presentation should have great appeal to any skilled nursing facility preparing for CMS and state surveys.

MRSA and CDI Train the Trainer

The MRSA and CDI Train the Trainer education courses are posted online at www.michigan.gov/hai. These programs are complete with all the tools a health professional would need to teach a class on MRSA and CDI including assessment of current knowledge, pre and post tests, power point presentations, resources, and certificates.

Site Visits

All participant site visits are complete, with the exception of Region 5, which is going to be scheduled very soon. All site visits have been positive with the champions networking and talking together about their future endeavors and their experiences participating in the prevention initiative. All regions have attained levels of process and impact. Many express their willingness to continue with the initiative beyond the February 2014 end date.

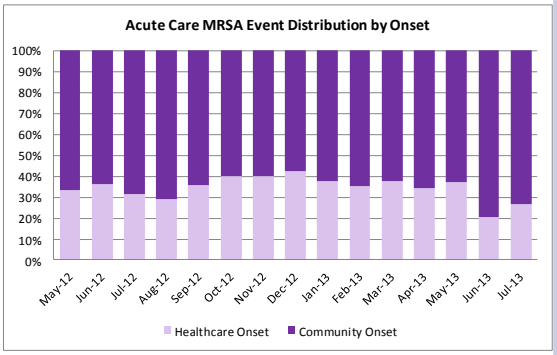
Champion Survey

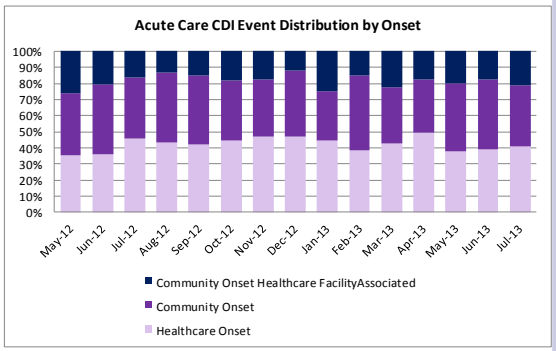
A 25 question Champion Survey to evaluate and quantify the action plan integration of the participating facilities in the MRSA/CDI Prevention Initiative is in final draft stages. Target date for posting is September 23, 2013.

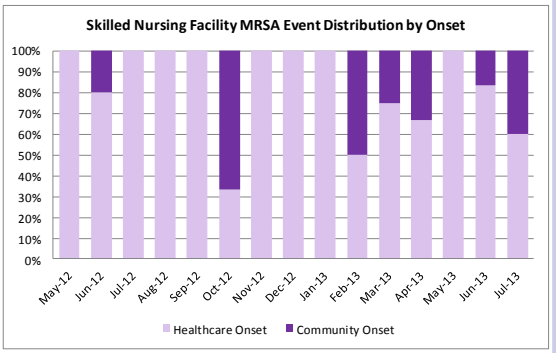
-Gail Denkins, DenkinsG@michigan.gov
Bryan Buckley, BuckleyB2@michigan.gov

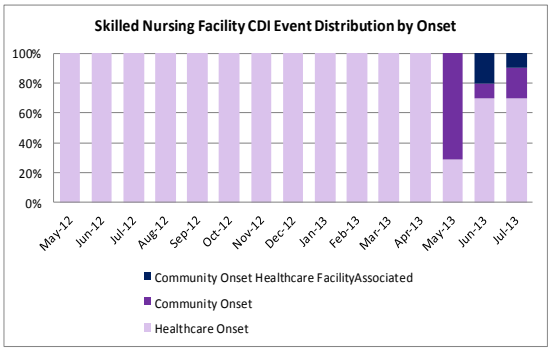
Data Collection and Reports

Hospitals and skilled nursing facilities submitted MRSA and CDI infection data and denominators to MDCH on a monthly basis for the baseline data collection period (May-Oct 2012). The project is currently in the 7th month of re-measurement since facility action plans were implemented. The following graphs show the aggregate monthly MRSA and CDI LabID event onset distribution for hospitals and SNFs participating in the Initiative.









NHSN Surveillance Update

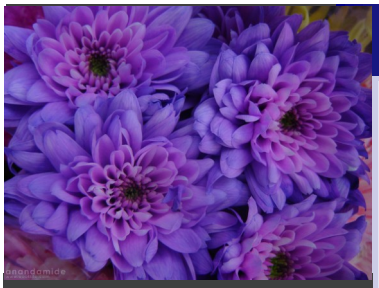
...continued from page 2.

As displayed in the graphs, the overall Michigan CAUTI SIR continued to rise into 2013, reaching an all-time high of 1.272 in 2013 Q1 (there were 77 hospitals providing data to this number). However, the subset of 25 hospitals originally reporting CAUTI data to the SHARP Unite remained stable and below one at 0.847.

An SIR below 1 is desired, as it means there were fewer infections than expected. For CAUTI, the expected number of infections is calculated using national NHSN baseline data from 2009. If the confidence interval (the bars above and below the SIR on the graph) are both above or below 1, then the SIR is considered statistically significantly different than expected-better or worse.

The exact reasoning behind the stability of the original reporting hospitals and the spike in the newly reporting hospitals remains uncertain. We continue to hypothesize that hospitals who have more experience reporting will report more accurately and may also have had enough time to implement more prevention activities. This will be an interesting trend to continue to monitor in Michigan and nationally.

–Allison Murad, MuradA@michgian.gov



Events/Calendar

10/23–10/25: MSIPC Fundamentals of Infection Control, Dewitt, MII

11/7–11/8: 40th Anniversary MSIPC Fall Conference, Lansing, MI

Visit www.msipc.org to download the conference brochures.

Please visit our SHARP Unit Calendar, found on the SHARP Unit homepage. If you would like to add an event to this calendar, please contact Allie Murad at *MuradA@michigan.gov*.

Helpful Links

www.michigan.gov/hai

www.mhakeystonecenter.org

www.mpro.org

www.mi-marr.org

www.msipc.org

www.apic.org

www.hhs.gov/ash/initiatives/hai/

www.hospitalcompare.hhs.gov

www.cdc.gov/nhsn

www.cdc.gov/HAI/prevent/prevention.html

www.cdc.gov/HAI/organisms/cre

www.cdc.gov/HAI/organisms/cdiff/Cdiff_infect.html

Carbapenem-Resistant *Enterobacteriaceae* (CRE) Surveillance and Prevention Initiative Update

Data Collection

Acute care facilities and long-term acute care facilities enrolled in the initiative continue to submit cases of CRE meeting the surveillance definition, the number of patient-days and number of admissions to MDCH on a monthly basis. The project is currently in the 6th month of remeasurement post baseline period. Facility-specific CRE Prevention Plans were implemented March 2013.

CRE Baseline Summary Report

The CRE Baseline Data Summary Report, highlighting data reported September 1, 2012-February 28, 2013, was distributed to participating facilities in July. Over the 6 months, 102 cases were reported in 957,220 patient-days giving us a statewide incidence rate of 1.07 per 10,000 patient-days. Data collection continues.

Prevention Plan Progress

The CRE Surveillance and Prevention Initiative held a conference call for all partners Wednesday, September 18th. During this call, selected facilities shared their progress with the implementation of their CRE Prevention Plan(s). The call was an opportunity for facilities to collectively share and discuss approaches to CRE prevention.

Educational and Professional Improvements

Facilities enrolled in the CRE Surveillance and Prevention Initiative were given incentives toward educational and professional improvements. The funding was able to provide numerous purchases of educational materials, books and guidelines, CIC certifications or re-certifications, online practice exams, multiple APIC, SHEA, and SCACM memberships, attendance at national conferences and many more resources. MDCH is very thankful for facility participation in CRE prevention.

-Brenda Brennan, BrennanB@michigan.gov
Bryan Buckley, BuckleyB2@michigan.gov

Incidence Rates of Carbapenem-Resistant Enterobacteriaceae (CRE) by Facility Type Reported September 2012 – February 2013

	No. of Cases	Total No. Patient-Days	Incidence Rate†	95% CI
Acute Care	94	929,939	1.01	0.82 - 1.24
LTAC	8	27,281	2.93	1.26 - 5.78
Overall	102	957,220	1.07	0.87 - 1.29

NOTE. CI, confidence interval; LTAC, long-term acute care facilities.
Acute care rate compared to LTAC rate, *p*-value = 0.018
† Per 10,000 patient-days

Jennie Finks DVM, MVPH
SHARP Unit Manager and HAI Coordinator, Michigan Department of Community Health
201 Townsend St., Capitol View Building, Fifth Floor
Lansing, Michigan 48913
Phone: (517) 335-8165
Fax: (517) 335-8263
E-mail: *FinksJ@michigan.gov*

Healthcare-associated Infections
HAI Elimination
www.michigan.gov/hai